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ACCELERATION SENSOR AND ITS MANUFACTURE.

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Abstract

An acceleration sensor having a novel structure by which acceleration measurement of high precision and reliability can be implemented. A monocrystalline silicon substrate (1) is joined to a monocrystalline silicon substrate (8) through an SiO₂ film (9). The monocrystalline silicon substrate (1) is a thin film. A cantilever (13) is formed on the monocrystalline silicon substrate (1). The thickness of the cantilever (13) in the direction parallel to the surface is smaller than that in the depth direction of the monocrystalline silicon substrate (1). The cantilever is movable in the direction parallel to the surface of the substrate. The surface of the cantilever (13) and the surface of the monocrystalline silicon substrate (1) which faces the cantilever (13) are covered with an SiO₂ film (5) in order to prevent the electrodes of the capacitance type acceleration sensor from being short-circuited. A signal processing circuit (10) is formed on the monocrystalline silicon substrate (1) to process signals produced by the movement of the

cantilever (13). 

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(21) 国際出願番号 POT/JP93/00535 (22) 国際出願日 1993年4月23日 (23. 04. 93) (30) 優先権データ 特願平4/108020 1992年4月27日 (27. 04. 92) JP (71) 出願人 (米国を除くすべての指定国について) 日本電装株式会社 (NIPPONDENSO CO., LTD.) (JP/JP) 〒448 愛知県刈谷市昭和町1丁目1番地 Aichi, (JP) (72) 発明者; および (75) 発明者/出願人 (米国についてののみ) 藤井哲夫 (FUJII, Tetsuo) (JP/JP) 〒448 愛知県刈谷市昭和町1丁目1番地 日本電装株式会社内 Aichi, (JP) (74) 代理人 弁理士 碓氷裕彦 (USUI, Hirohiko) 〒448 愛知県刈谷市昭和町1丁目1番地 日本電装株式会社内 Aichi, (JP) (81) 指定国 AT (欧州特許), BE (欧州特許), CH (欧州特許), DE (欧州特許), DK (欧州特許), ES (欧州特許), FR (欧州特許), GB (欧州特許), GR (欧州特許), IE (欧州特許), IT (欧州特許), LU (欧州特許), MO (欧州特許), NL (欧州特許), PT (欧州特許), SE (欧州特許), US.		添付公開書類 国際調査報告書	
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(57) Abstract			
<p>An acceleration sensor having a novel structure by which acceleration measurement of high precision and reliability can be implemented. A monocrystalline silicon substrate (1) is joined to a monocrystalline silicon substrate (8) through an SiO₂ film (9). The monocrystalline silicon substrate (1) is a thin film. A cantilever (13) is formed on the monocrystalline silicon substrate (1). The thickness of the cantilever (13) in the direction parallel to the surface is smaller than that in the depth direction of the monocrystalline silicon substrate (1). The cantilever is movable in the direction parallel to the surface of the substrate. The surface of the cantilever (13) and the surface of the monocrystalline silicon substrate (1) which faces the cantilever (13) are covered with an SiO₂ film (5) in order to prevent the electrodes of the capacitance type acceleration sensor from being short-circuited. A signal processing circuit (10) is formed on the monocrystalline silicon substrate (1) to process signals produced by the movement of the cantilever (13).</p>			